

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Please rewrite claims 20, 21, 27, 28 and 30 as follows:

1-19. (Canceled)

20. (Currently Amended) A method for clearing misfolded proteins from blood comprising contacting a sample of blood with a proteon nucleation center (PNC) for a period of time, said proteon nucleation center (PNC) comprising a metallic nanoparticle having a diameter of about 1-2 nm and containing about 40-300 metal atoms selected from the group consisting of copper, zinc, iron and alloys of copper, zinc or iron, and removing the misfolded proteins from the sample.

21. (Currently Amended) A method for the cyclic amplification of proteons in a biological sample comprising the steps of:

a) placing an aliquot of a sample ~~comprising containing~~ a proteon nucleation center (PNC) ~~comprising a metal cluster in an unheated subsample, said~~ proteon nucleation center (PNC) comprising a metallic nanoparticle having a diameter of about 1-2 nm and containing about 40-300 metal atoms selected from the group consisting of copper, zinc, iron and alloys of copper, zinc or iron;

b) heating the subsample; and

c) determining the number of proteons in said sample, said proteons comprised of misfolded or partially misfolded proteins surrounding a proteon nucleation center (PNC); and

d) repeating steps (a), (b) and (c) with aliquots taken from the most recently heated subsample for 1 or more cycles until the number of proteons determined to be in each heated subsample no longer increases.

22. (Previously Presented) The method of claim 21, further comprising correlating the number of proteons in the subsample in which the number of proteons no longer increases to the amount of misfolded proteins present in the biological sample.

23. (Previously Presented) The method of claim 21, wherein the subsamples are each 1 ml and the aliquot is 5 μ l.

24. (Previously Presented) The method of claim 21, wherein a heating time is selected from the group consisting of 1, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115, and 120 minutes.

25. (Previously Presented) The method of claim 21, wherein a heating temperature is selected from the group consisting of 37, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115, and 120°C.

26. (Previously Presented) The method of claim 21, wherein the number of cycles is selected from the group consisting of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, and 25 cycles.

27. (Currently Amended) The method of claim 21, ~~wherein a heating further including applying pressure to each heated subsample, and said pressure~~ is selected from the group consisting of 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 and 25 psi.

28. (Currently Amended) The method of claim 21, ~~wherein a heating further including applying pressure to each heated subsample, and said pressure~~ is ambient pressure.

29. (Previously Presented) The method of claim 21, wherein the number of cycles is 6, each of said cycles comprising a heating time of 15 minutes at a heating temperature of 60°C.

30. (Currently Amended) A method for the detection of a disorder comprising the steps of:

- a) centrifuging a biological sample until a supernatant is formed;
- b) dividing said supernatant into a plurality of subsamples;
- c) heating a subsample;
- d) obtaining an aliquot of said heated subsample;
- e) placing said aliquot into an unheated subsample;
- f) heating the subsample of (e); and

g) repeating steps d-f with aliquots taken from the most recently heated subsample for 1 or more cycles to produce ~~proteons in said a~~ final subsample;

h) contacting said ~~proteons produced from a most recently heated~~ final subsample with an antibody that binds to a protein selected from the group consisting of hemoglobin, prion protein, β -amloid, α -synuclein, tau protein, serpins, neuroserpin, glutamate repeats, amylin, SOD, ApoB CFTR protein, immunoglobulin, amyloid light chain, serum amyloid A, transthyretin, β 2-microglobulin, apolipoprotein A-1, cystatin C, lysozyme, prion protein fragments, beta protein fragment 1-40/43, immunoglobulin light chain or fragments thereof, serum amyloid A 78 residue fragment, transthyretin fragments, apolipoprotein A-1 fragments, cystatin A minus 10 residues, gelsolin 71 residue, islet amyloid polypeptide fragment, insulin, calcitonin fragments, atrial natriuretic factor, lysozyme and fragments thereof, and fibrinogen fragments;

i) identifying the protein; and

j) correlating the identified protein to a disorder selected from the group consisting of sickle cell anemia, the presence of Heinz bodies, inclusion body hemolysis, drug-induced inclusion body hemolysis, cancer, atherosclerosis, malaria, infections, auto-immune disorders, toxic reactions, internal bleeding, Creutzfeld-Jacob disease (CJD), new variant CJD, bovine spongiform encephalopathy (BSE), Gerstmann-Straussler-Scheinker disease, fatal familial insomnia, kuru, Alzheimer's disease, Down's syndrome, familial Alzheimer's disease, Parkinson's disease, the presence of Lewy bodies, frontotemporal dementia, the presence of Pick bodies, α 1-antitrypsin deficiency, cirrhosis, emphysema, antithrombin deficiency, thrombosis, C1-inhibitor deficiency, angioedema, neurodegenerative disease, the presence of Collins bodies, inherited neurodegenerative disorders, Huntington's disease, diabetes type II, amyotrophic lateral sclerosis, atherosclerosis, cystic fibrosis, systemic amyloid light chain amyloidosis, nodular amyloidosis, reactive systemic amyloid A amyloidosis, chronic

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inflammatory disease, senile systemic amyloidosis, familial amyloid neuropathy, familial cardiac amyloidosis, hemodialysis amyloidosis, the presence of prostatic amyloid, familial amyloid polyneuropathy, familial visceral amyloidosis, hereditary (Icelandic) cerebral angiopathy, familial visceral amyloidosis, spongiform encephalopathies, primary systemic amyloidosis, secondary systemic amyloidosis, familial amyloid polyneuropathy I, familial amyloid polyneuropathy III, cerebral amyloid angiopathy, Finnish hereditary systemic amyloidosis, injection-localized amyloidosis, medullary thyroid carcinoma, atrial amyloidosis, non-neuropathic systemic amyloidosis, and hereditary renal amyloidosis.

31. (Canceled)